Herbal medicine breakthrough: True Kadamb tree contains rare alkaloid that can revolutionize cancer treatment

10/11/2025 // Lance D Johnson // **580** Views

Tags: alkaloids, alternative medicine, anti-inflammatory, anticancer, breakthrough, cancer research, cancer solutions, discoveries, drug discovery, goodcancer, goodhealth, goodmedicine, goodscience, health science, herbal medicine, mitraphylline, molecular biology, natural cures, natural health, natural medicine, Naturopathy, Oncology, phytochemistry, phytonutrients, plant medicine, remedies, research, true kadamb

Deep in the forests of the Indian subcontinent grows a tree that has quietly guarded a molecular treasure for centuries. *Mitragyna parvifolia* (True Kadamb, Kaim), a lesser-known relative of the controversial kratom plant, produces a rare alkaloid called mitraphylline—a compound that scientists now believe could hold the key to unlocking new anticancer therapies. Researchers from the University of British Columbia and the University of Florida have mapped its genome, revealing a sophisticated biochemical assembly line that crafts this potent molecule. Their discovery not only demystifies how nature builds such complex compounds but also opens the door to producing them sustainably in labs—potentially transforming how we approach cancer and inflammation.

Key points:

- Scientists decoded the genome of *Mitragyna parvifolia*, identifying three never-before-seen enzymes that assemble mitraphylline—a compound with demonstrated anti-cancer properties.

- Young leaves contain the highest concentrations of mitraphylline, suggesting the plant prioritizes chemical defense in its early growth stages.

- The tree's genetic structure is tetraploid, meaning it has four copies of each chromosome, which may explain its ability to produce diverse alkaloids.

- By inserting these genes into tobacco plants, researchers successfully replicated mitraphylline production—a breakthrough for scalable, lab-based synthesis.

- The findings could pave the way for new anti-inflammatory and anti-cancer treatments derived from natural plant chemistry.

The molecular assembly line inside a leaf

Plants have long been master chemists, crafting intricate molecules that modern science struggles to replicate. But until now, the exact steps Mitragyna parvifolia takes to build mitraphylline remained a mystery. The research team discovered three enzymes working in sequence, each performing a precise transformation. The first two enzymes flip ajmalicine—a common plant alkaloid—into its mirror-image form, while the third reshapes it into mitraphylline's distinctive twisted structure.

"This is like finding the missing links in an assembly line," says Dr. Thu-Thuy Dang, a lead researcher on the project. Without any one of these enzymes, the process stalls. The discovery is particularly exciting because mitraphylline's unique architecture—a spirooxindole—has shown promise in lab studies for slowing cancer cell growth. Yet, extracting meaningful quantities from wild plants has been impractical. Now, with the genetic blueprint in hand, scientists can engineer microbes or plants to produce it consistently, bypassing the challenges of traditional harvesting.

Why young leaves hold the key

Like many medicinal plants, *M. parvifolia* concentrates its most potent compounds in its youngest leaves—likely as a defense against pests and pathogens. The study found that genes involved in mitraphylline production were far more active in tender foliage than in mature leaves or stems. This mirrors patterns seen in other plants, where chemical defenses are strongest during vulnerable growth phases.

The tree's tetraploid genetics—a doubling of its chromosomes—may also explain why it produces such a rich mix of alkaloids. Similar genetic expansions have been observed in coffee and quinine-producing plants, suggesting a shared evolutionary strategy for chemical diversity. "Plants are fantastic natural chemists," Dr. Dang notes. "Their ability to evolve new biochemical pathways is unparalleled."

Historically, drug discovery has relied on isolating rare compounds from plants, often at great ecological and financial cost. But with mitraphylline's genetic pathway now mapped,

researchers can explore synthetic biology solutions. The team proved this by inserting the genes into tobacco plants, which successfully converted ajmalicine into mitraphylline, a crucial proof of concept.

This approach could revolutionize how we access plant-based medicines. Instead of depending on slow-growing tropical trees, scientists might one day produce mitraphylline in yeast or bacteria, ensuring a stable supply for research and potential therapies. The implications extend beyond cancer treatment; mitraphylline's anti-inflammatory properties could also make it valuable for conditions like arthritis and autoimmune disorders.

While *M. parvifolia* has been overshadowed by its psychoactive cousin, kratom, this research highlights its untapped medicinal potential. The study bridges traditional herbal knowledge and cutting-edge biotechnology, offering a glimpse into how nature's oldest remedies might inform tomorrow's treatments.

As science continues to unravel the secrets of plant chemistry, one thing becomes clear: the forests still hold answers we've only begun to understand. Modern medical scientific research should re-direct its focus to herbalism.

Sources include:

StudyFinds.org

Academic.oup.com

ScienceDirect.com

HumanJournals.com [PDF]

RELATED TOPICS

ALKALOIDS | ALTERNATIVE MEDICINE | ANTI-INFLAMMATORY | ANTICANCER | BREAKTHROUGH | CANCER RESEARCH | CANCER SOLUTIONS | DISCOVERIES | DRUG DISCOVERY | GOODCANCER | GOODHEALTH | GOODMEDICINE | GOODSCIENCE | HEALTH SCIENCE | HERBAL MEDICINE | MITRAPHYLLINE | MOLECULAR BIOLOGY | NATURAL CURES | NATURAL HEALTH | NATURAL MEDICINE | NATUROPATHY | ONCOLOGY | PHYTOCHEMISTRY | PHYTONUTRIENTS | PLANT MEDICINE | REMEDIES | RESEARCH | TRUE KADAMB

LATEST NEWS

10/11/2025 / By Mike Adams

ANALYSIS: What will happen after Trump's new 100% tariff on China goes into effect? HINT: Catastrophic results for the U.S. financial infrastructure

10/11/2025 / By Mike Adams

Enoch 2.0 AI Engine Announced: A New AI Sheriff in Town that Outsmarts ChatGPT, Grok and Gemini

10/11/2025 / By Willow Tohi

NIH-funded scientists engineered hybrid bird flu virus in Europe, tested in U.S.

10/11/2025 / By Willow Tohi

Farmers bear the brunt of government shutdown as political gridlock prioritizes immigration over agriculture

10/11/2025 / By Lance D Johnson

Herbal medicine breakthrough: True Kadamb tree contains rare alkaloid that can revolutionize cancer treatment

10/11/2025 / By Patrick Lewis

California enacts first-of-its-kind law to phase out ultra-processed foods from school meals

RELATED NEWS

10/11/2025 / By Ava Grace

Natural compound from common plants emerges as potent weapon against widespread gum disease

10/10/2025 / By Finn Heartley

Medical freedom hero exposes depopulation agenda: DOJ abandons charges against dissident surgeon

10/08/2025 / By Ava Grace

The golden alkaloid: Berberine's ancient roots and modern revival

10/08/2025 / By S.D. Wells

Tap into the HERBEL REMEDY ARSENAL that improves gut health, digestion, brain health and longevity

10/08/2025 / By Patrick Lewis

"Liquid gold" in the kitchen: The ancient remedy of honey fermented garlic returns in health spotlight

10/08/2025 / By Kevin Hughes

Reviving the lost art of herbal medicine: Deb Soule's "The Healing Garden"

0 COMMENTS

Please sign in with your Brighteon account to leave comments

Not a user, Create your FREE account today.
Learn more about our new comment system.

Sign In Sign Up

TAKE ACTION:

Support Natural News by linking to this article from your website.

Permalink to this article:

https://www.naturalnews.com/2025-10-11-true-kadamb-tree-rare-alkaloid-revolutionize-cancer-treatment.html Copy

Embed article link:

<a href="https://www.naturalnews.com/2025-10-11-true-kadamb-tree-rare-alkaloid-revolutionize-cancer-treatment. Copy

Reprinting this article:

Non-commercial use is permitted with credit to NaturalNews.com (including a clickable link).
Please contact us for more information.

FREE EMAIL ALERTS

Get independent news alerts on natural cures, food lab tests, cannabis medicine, science, robotics, drones, privacy and more.

Enter Your Email Address

We respect your privacy

Download on the App Store | Install for Android | AI Powered by Brighteon.AI

This site is part of the Natural News Network © 2022 All Rights Reserved. Privacy | Terms All content posted on this site is commentary or opinion and is protected under Free Speech. Truth Publishing International, LTD. is not responsible for content written by contributing authors. The information on this site is provided for educational and entertainment purposes only. It is not intended as a substitute for professional advice of any kind. Truth Publishing assumes no responsibility for the use or misuse of this material. Your use of this website indicates your agreement to these terms and those published here. All trademarks, registered trademarks and servicemarks mentioned on this site are the property of their respective owners.